		AL JAZEERAH DRILLING LLC											**Form #**			**HSEMSP-07**	
		PROJECT: WATER TRANSMISSION LINE FROM IC-07 to FALAJ PS AND AL RIFFA AREA											**Rev.**			**0**	
													DOI			**12.04.2026**	
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Environmental Aspect & Impact Risk Register

Ref	Activity	Subactivity (if required)	Theme	Environmental aspects	Circumstance	Impacts	Risk rating			Significant	Opportunity	Control measures	Residual risk rating			New or modified in revision
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1	Site clearance	Removal of debris	Waste	Removal of debris	Normal	Waste generation, unearthing/damaging underground utilities	4	1	Low	No	No	1. Ensure clearance of vegetation is constrained to necessary areas only within site footprint. 2. Big portion of the site is already graded and laid with aggregates. These aggregates must be recovered and reused.				
2	Earthworks	Stockpiling of fill materials onsite	Soil	Stockpiles not covered, ground surface not compacted	Abnormal	Soil erosion	4	1	Low	No	No	1. Stockpiles to be compacted or covered (if practically applicable) as much as possible 2. Ground surface to be compacted or watered to reduce dust emission and soil erosion				
3	Earthworks	Stockpiling of fill materials onsite Excavation, backfilling with suitable excavated materials Transportation of dustry materials on trucks Loading/offloading dusty materials	Air	Stockpiles not covered, ground surface not compacted. Excavation, backfilling with suitable excavated materials	Abnormal	Dust generation, nuisance to sensitive receptors. Respiratory issues for site workers/local community, smothering of sensitive receptors with sand/dust.	5	1	Medium	Yes	No	1. Erection of hoarding along the site boundary and/or areas where dusty activities performed. 2. Site layout: locate the dust generating activities, haulage routes, stockpiles and dusty materials away from the sensitive receptors as far as possible (taking the predominant wind direction into consideration). 3. Dust generation to be prevented by applying dust suppression measures such as water suppression. 4. Materials management areas to be maintained to constrain dust pollution e.g. limit height and side slopes of stored material 5. Removal of stockpiles or materials that have a potential to emit dust from site as soon as possible 6. Dusty materials on site or on truck to be covered by impervious sheet to prevent wind erosion. 7. Minimise drop heights. Use water sprays on such equipment/work areas wherever appropriate. 8. Suspension of dusty works during periods of high wind speed	4	1	Low	
4	Earthworks	Excavation, earth grading	Waste	Generation of excavated spoil materials	Normal	Landfill void space occupancy Pressure on Construction & Demolition waste facilities	5	1	Medium	Yes	No	1. Reuse, recycle excavated / spoil material for backfilling as much as possible	4	1	Low	
5	Earthworks	Stockpiling of fill materials onsite Excavation, backfilling with suitable excavated materials	Noise	Excavation and backfilling	Normal	Temporary: acoustic pollution	5	1	Medium	Yes	No	1. Loading and unloading to be carried out away from noise receptors. 2. Inherently quiet equipment to be selected / used wherever possible. If equipment does not comply with noise limits it will be replaced, if practical. 3. Equipment that is fit for the required tasks in terms of power requirements shall be used. 4. Careful selection of plant and construction methods. Working methods selected that produce the least amount of noise practicable. 5. Best practicable means' (BPM) to be used to minimise nuisance from noise and vibration.	4	1	Low	

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13	6	Concrete works	Concrete mix delivery from batching plant to site	Air	Transportation of concrete mix by trucks - air emissions, carbon footprint increase	Normal	Degradation of air quality, consumption of fuel (depletion of natural resources), contribution to GHG emissions	5	1	Medium	Yes	No	1. Procure concrete mix at the nearest available location from the site to reduce travel distance.	4	1	Low	
14	7	Concrete works	Concrete pouring	Soil & Groundwater	Concrete spills during pouring operations, concrete mixers washing in undesignated area	Emergency	Soil and groundwater contamination and degrading	5	1	Medium	Yes	No	1. The placing of any wet concrete in or close to any watercourse/sea will be controlled so as to minimize the risk of cement leaking into the watercourse/sea. 2. When possible no concrete placement operation shall be carried out over water without suspended sheeting deployed to catch any potential spillage. Washout from concrete mixing plant or the cleaning of ready mix concrete shall not be discharged, untreated, to drains or watercourses. 3. The washing out of any concrete mixing plant or cleaning of ready mix concrete lorries shall be carried out so as to prevent the effluent from such cleaning being allowed to flow into any drain or watercourse. Concrete shall not be placed into flowing water. The resultant alkaline water shall not be discharged directly to a watercourse but fully contained, stored and transported off-site to an industrial wastewater treatment facility, authorized by the DM for treatment and disposal.	4	1	Low	
15	8	Concrete works	Washing of equipment	Waste	Improper collection and disposal of contaminated wastewater, potential spillages	Abnormal	Soil, surface and groundwater pollution. Impact on terrestrial environment	4	2	Medium	Yes	No	1. Concrete washing of all concrete trucks will be undertaken in designated washing area. 2. The bunded concrete washout area will be used for washing of concrete truck chutes and concrete bucket only. 3. No concrete washout will be released directly into the environment. Wastewater will be collected and disposed at concrete supplier's batching plant premises (treatment) 4. Concrete washing area will be positioned away from the existing underground irrigation water tank and water ponds.	4	1	Low	
16	9	Concrete works	Generation of concrete waste	Waste	Generation of concrete waste	Normal	Landfill void space occupancy Pressure on Construction & Demolition waste facilities	5	1	Medium	Yes	No	1. Solid and dry concrete waste will be reused to backfill wherever possible or crushed for road subbase if practicable. 2. Fresh concrete waste can be reused for blocks/barriers manufacturing (to be used for temporary works)	4	1	Low	
17	10	Road works	Laying of asphalt for transport and recreational routes	Noise & Vibration	Nosie generation and vibration from compaction process	Normal	Acoustic pollution, nuisance to workers and the sensitive receptors	5	1	Medium	Yes	No	1. Plan and schedule construction activities to avoid high noise producing equipment operating simultaneously. 2. No construction activities to be undertaken during the night-time period (8 pm-7am), on Friday or on public holidays without prior consent of DM. 3. Noisy operations to be carried out away from noise receptors. 4. Erect hoarding/noise barrier along the site boundary and/or areas where activities emitting high noise levels are performed. 5. Inherently quiet equipment to be selected / used wherever possible. If equipment does not comply with noise limits it will be replaced, if practical. 6. Equipment that is fit for the required tasks in terms of power requirements shall be used. 7. Vehicle management. Equipment maintenance 8. Use of appropriate PPE (ear defenders)	4	1	Low	

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18	11	Materials preparation	Cutting/Grinding of concrete/stone/metals etc. Welding of metals	Air	Dust and gaseous emissions generation from cutting/grinding of concrete/stone/metals etc. and welding of metals	Normal	Temporary: Emissions of fine particulates and gasses, localised odours and health issues for site workers	4	1	Low	No	No	1. Erection of hoarding along the site boundary and/or areas where dusty activities performed 2. Dust generation to be prevented by applying dust suppression measures such as water suppression				
19	12	Mobile equipment operation	Movement of vehicles on unpaved surfaces	Air	Dust generation, suspension of particulates into air column (dust emissions)	Normal	Temporary: Suspension of particulates into air column	5	1	Medium	Yes	No	1. Movement of vehicles, mobile equipment and machinery to be restricted within the work areas. 2. Surfacing / compaction of site access roads 3. Haul roads to be watered (i.e. sprayed) as much as possible. The frequency of watering to be determined by weather conditions. If additives in the water are used to increase its dust suppression properties, the chemical shall have no adverse impact on underground water. 4. The speed limit of vehicles on haul road a maximum of 15 km/h. 5. Wheel washing/cleaning at site exits before they leave site to minimize dust and soil on wheels being transferred off site (if practical)	4	1	Low	
20	13	Mobile equipment operation		Noise & Vibration	Increase background noise levels	Normal	Acoustic pollution, nuisance to workers and the sensitive receptors	5	2	Medium	Yes	No	1. Acoustic covers to be fitted on all machine engines to be closed during operation. Keep acoustic covers closed at all times. 2. All vehicles and plant will be maintained in good working order to ensure optimum performance (including lubricating moving parts, tightening loose parts and replacement of worn out components). 3. If equipment or vehicles are seen to have an excessive amount of noise /vibration, they will be given defect notices and taken out of service until repaired and approved for re-deployment by site supervisor representative; 4. No idling time. Plant and equipment to be shut or throttled down when not in use to avoid vibrations; 5. As far as practicable, noise from reversing alarms to be managed as follows: site layout designed to limit and where reasonably practicable, avoid the need for the reversing of vehicles; use of banks men to avoid the use of reversing alarms; reversing alarms incorporating a feature for example self-adjusting output sounders; and reversing alarms set to the minimum output noise level required for health and safety compliance.	4	1	Low	
21	14	Mobile land equipment operation	Washing and maintenance of equipment on site (undesignated area)	Soil & Groundwater	Contaminated wash-out Oil spills on soil	Abnormal	Soil and/or ground water contamination Soil erosion	4	1	Low	No	No	1. Equipment is not allowed to be washed site. 2. Wheel cleaning facility available at exit gate for track leaving site. 3. Only designated area for equipment maintenance (managed by Main Contractor) to be used.				

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22	15	Mobile equipment operation		Soil	Placement or movement of heavy equipment aat close proximity to areas where there is an identified risk of erosion (e.g. excavation sites, exposed edge of the island)	Abnormal	Soil erosion	4	1	Low	No	No	1. Do not place heavy machinery near edges of excavation sites or exposed edge of the island. 2. Edge protection at excavated areas				
23	16	Mobile equipment operation	Operation of plant, vehicles, machinery, generators on diesel fuel	Soil & Groundwater	Use of non-good condition equipment may cause fuel leakage / spills during movement or on standby. Maintenance in unauthorized area.	Abnormal	Soil and Groundwater contamination	5	2	Medium	Yes	No	1. All construction vehicles and machinery to have up to date inspection certificates to demonstrate that they are in good working condition before they can be used on site. All maintenance records to be kept in accordance with the Manufacturers' requirements 2. No maintenance to be done outside of the dedicated maintenance workshop area 3. Daily checks / inspections prior to start works.	3	1	Low	
24	17	Mobile equipment operation	Operation of construction vehicles, tools, machinery, generators on diesel fuel, tug & speed boats	Air	Emissions of exhaust gasses	Normal	Temporary (locally): Air pollution. Emissions of VOCs and Greenhouse Gases (GHGs), localised odours.	5	1	Medium	Yes	No	1.Construction vehicles and machinery to be fitted with exhaust systems and emission control devices (e.g. a catalytic converter, diesel particulate matter filter) which are maintained and in good working order. 2. All activities, related to engine idling (trucks, vehicles, machinery) to be limited as much as practical (e.g. no longer than five minutes). 3. Whenever excessive smoke is identified from any construction vehicle or machinery, it shall be serviced as soon as possible and taken out of use until the maintenance has been satisfactorily completed. 4. Banning of open burnning on site. 5. Use of clearer low sulfur fuel 6. Using mains electricity or battery powered equipment to avoid using diesel or petrol powered generators, where practicable.	4	1	Low	
25	18	Mobile equipment operation	Daily transport of construction employees; Delivery of construction materials and fuel; Delivery of site equipment and support utilities; Collection of waste for off-site disposal Construciton of the pier protection system and dreging	Traffic	Increase in road traffic	Normal	Potential road traffic congestion	5	1	Medium	Yes	No	1. Manage the sustainable delivery of machinery, materials, workers, and staff members to avoid double handling of trips. 2. Site traffic management. 3. Arrangement for shared transport of staff and site workers. 4. Management of delivery shcedule, minimising construction materials delivery during peak traffic.	4	1	Low	
26	19	Hazardous materials handling and storage	Chemicals and hydrocarbons (fuel) stored on site	Air	Emission of Hazardous fumes, Volatile Organic Compounds (VOC) from open chemicals and hydrocarbons stored on site. Mixed materials storage	Emergency	May alter air quality and cause health problem to workers May cause chemical reaction and potential cause of fire if incompatible chemicals stored in the same storage area	2	4	Medium	Yes	No	1. Store chemicals according to relevant MSDS, DO NOT store incompatible chemicals in the same storage 2. Designated and well ventilated storage facilities provided for the storage of volatile organic materials 3. Storage area to be located away from on-site and off-site sensitive receptors (with consideration of predominant wind direction) 4. The quantity of volatile materials to be stored on-site should be kept to minimum. Containers holding the volatile materials should be kept closed when not in use.	2	3	Low	

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20	Hazardous materials handling and storage		Waste	Expired chemicals and Empty containers improper storage and disposal	Abnormal	Generation of hazardous waste. Contamination of soil and ground water if not properly stored and disposed.	5	1	Medium	Yes	No	1.Only required quantities to be procured and stored on site. 2. Store empty chemical container in the designated hazardous waste storage area, do not drain residue into the sewer. 3. Emergency mock drill practice on spill response. 4. Sufficient quantity of Spill kit to be made accessible. 5.Hazardous waste only to be disposed to licensed facilities for treatment and final disposal.	4	1	Low	
21	Hazardous materials handling and storage		Soil & Groundwater	Chemical spillage	Emergency	Soil and ground water contamination if not properly stored and handled	4	2	Medium	Yes	No	1. Drums must be stored in a bunded area that is sufficient to hold at least the volume of 25% of the drums to be stored up to 10 Kl plus 10% of any volume in excess. 2. Ensure that storage/containment is covered with a material that is strong enough and compatible with the stored hazardous substances to prevent the receptacle from corroding causing collapse or cracking. 3. Paint materials to be stored in designated container according to MSDS requirements. 4. Clean spill immediately with suitable equipment (i.e. chemical spill kit) or absorbent. Fire extinguishers (with valid inspection tags dully filled out) to be available at every risk location. 5. All haz. materials to be properly labeled	4	1	Low	
22	Hazardous materials handling and storage	Diesel refilling and storage, chemicals storage and handling	Soil & Groundwater	Leak / overflowing / spillage; Drip tray filled with diesel may generate contaminated water during the occurrence of rain.	Emergency	Soil and groundwater contamination and degrading	4	2	Medium	Yes	No	1. Appropriate fuel storage facilities (suitable bunded or with in-built bunded protection) 2. Siting the sotrage facility away from sensitive receptors and working areas 3. Spill and fire response procedure and equipment 4. Materials inventory /regiser and MSDS files 5. Labelling of containers and areas. Labels to inlcude name of chemical, hazard and precautionary measures. 6. Locks to be installed on fuel tanks and storage areas with signage to prohibit unauthorised access. 7. Undertake re-fuelling activities at designated areas in accordance with appropriate procedures.	4	1	Low	
23	Hazardous materials handling and storage	Accidental chemical spillage	Soil & Groundwater	Ineffecitive procedure, untrained personnel	Emergency	Lack of procedure on emergency may cause bigger damage.	3	3	Medium	Yes	No	• Emergency response procedure • Emergency drills • Chemicals safe handling trainings to all personnel, working with chemicals to be provided for emergency response and clean-up.	2	3	Low	
24	Construction works (general)	Combustion emissions, earthworks and vehicle movements over unpaved surfaces	Air Terrestrial Ecology	Generation of airborne particulates	Normal	Negative health effects to existing/surrounding terrestrial fauna and flora.	4	1	Low	No	No	1. Implement construction air quality mitigation measures proposed in CEMP (Section 6.1) 2. Ensure construction works are constrained within the site footprint				
25	Construction works (general)	Operation of plant and equipment	Noise & Vibration Terrestrial Ecology	Generation of noise and vibration	Normal	Nuisance to sensitive receptors. Disturbance and negative health and behavioural effects to local terrestrial fauna.	4	1	Low	No	No	1. Implement Noise mitigation measures proposed in CEMP (Section 6.2) 2. Ensure construction works are constrained within the site footprint. 3. Provide community liaison notification (signage) that includes a phone number and email address for a permanent site contact so that noise complaints can be received and addressed in a timely manner.				

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33	26	Dust suppresion	Water spraying	Soil & Groundwater	Contaminated water use for dust suppresion	Abnormal	Soil contamination from using contaminated water for dust suppresion	4	1	Low	No	No	1. Water used for dust suppression shall meet the standards for water used for irrigation through spraying.				
34	27	Dust suppresion	Water spraying	Soil	Excessive runoff from dust suppression water	Abnormal	Soil erosion	4	1	Low	No	No	1. Dust suppression's track's water hose holes to be of appropriate size to prevent excessive waterflow. It is not allowed to spray excessive water volumes to prevent water ponds and mud on roads.				
35	28	Heavy storm water run-off	-	Soil	Heavy stormwater run-off	Abnormal	Soil erosion	3	2	Low	No	No	1. Site fences shall be covered (no gap between fence and ground level) to prevent soil erosion outside of site area in case of heavy rain event. 2. Excavation pit edges to be protected to prevent collapse in case of heavy-rain.				
36	29	Waste generation	Waste storage onsite and disposal	Soil & Groundwater	Improper storage and disposal of hazardous wastes	Abnormal	Soil and groundwater contamination and degrading	4	2	Medium	Yes	No	1. Implementation of appropriate waste management measures, ensureing that suitable collection and storage facilites (e.g. bunded) are provided on-site and that sewage from temporary septic tanks and haardous waste are regularly collected for off-site disposal. 2. Designated bunded areas for equipment and vehichle wasing. 3. Provision of a suitable temporary sewage holding tank on-site. 4. Provision of suitably bunded storage area for hazardous waste. 5. Emergeny management plan/induction/training on waste management 6. Restriction of access to waste storage areas. 7. Use of DM approved waste service providers	4	1	Low	
37	30	Waste generation		Terrestrial Ecology	Improper storage and disposal of construction waste (hazardous and non-hazardous)	Abnormal	Injury or death to local terrestrial fauna through entanglement or ingestion of potentially lethal waste materials.	4	2	Medium	Yes	No	1. Waste to be managed as per propsed Waste management plan (CEMP Section 6.6) 2. Waste to be collected in designated bins. 3. Organic wastes to be always covered and dispoed on timely to avoid odour and attraction of vermin. 4. Good housekeeping to be maintained at all times.	3	2	Low	

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31	Site offices and temporary facilities	Welfare facilities	Odour	Sanitary facilities use (e.g. toilets)	Abnormal	Odour emissions. Nuisance to reseptors	5	1	Medium	Yes	No	1. Locate toilet utilities and sewage tanks and waste storage facilities away from sensitive receptors. 2. Sanitary and waste disposal facilities to be kept in good conditions and clean at all times. Leaks should be fixed as soon as possible. 3. Implement appropriate waste management measures, ensuring proper waste storage and regular waste collection for off-site disposal by DM licensed contractor. 4. Waste bins holding putrescible waste should be covered to minimise odour emission and attraction of vectors.	3	1	Low	
32	Site offices and temporary facilities	Welfare facilities	Soil & Groundwater	Improper storage and disposal of sewage water (i.e. tanks leaks, overflows)	Abnormal	Soil and groundwater contamination and degrading	4	2	Medium	Yes	No	1. Site Facilities to be installed with septic tanks for sewage wastewater (from toilets and offices) and separate drainage tanks for industrial waste water (e.g. concrete washing / equipment washing) 2. The waste water from the site facilities will be collected and disposed in a suitable way by sewage truck. 3. Sewage wastewater collects in the sewage tank, for office, site or camp, must be collected regularly to avoid overflowing.	4	1	Low	
33	Site Offices / Facilities Operation	Welfare facilities	Waste	Generation of mixed domestic refuse, potential littering	Abnormal	Temporary: Degradation of working environment conditions, Pressure on Domestic Waste Management Facilities	5	1	Medium	Yes	No	1. Segregate office waste materials from recyclable and non-recyclable waste. 2. Reuse paper or other items as much as possible. 3. Respect recycling program within the site and office environment.	4	1	Low	
34	Site Offices / Facilities Operation		Energy & Resources	Inefficient use of electrical office appliances (i.e. computer, printer, lights, A/C etc.), excessive water consumption	Abnormal	Natural resources depletion	4	1	Low	No	No	1. Use electrical equipment/appliances efficiently (i.e. turn off computer monitor or other appliances when not in use) – Conserve Energy 2. Close taps when not in use. Push-button / sensors tabs, water reducing / saver devices to be considered. 3. Environmental awareness sessions to be conducted for office staff				
35	Employment	Hiring stuff	Socio-Economic	Generation of jobs	Normal	Generation of jobs	5	3	High	Yes	Yes	Positive Impact				
36	Procurement	Procurement of materials and services	Socio-Economic	Increased economic activity, business opportunities	Normal	Increased economic activity, business opportunities	5	3	High	Yes	Yes	Positive Impact				
37	Nightworks		Illumination	Artificial lighting for night activities	Normal	May affect behavior and ecology of potentially existing nocturnal species and induce floristic physiological response.	3	2	Low	No	No	• Obtain prior approval / permissions from EX20 via Supervision Consultant in case of night works .• Project light emitted by external lighting fixture below the horizontal plane passing through the lowest part of the fixture and thus does not distract neighbouring users or occupiers; • Downward directed lighting must be used for lighting of signage all along the internal roads. • Ensure provision of balloon lights which can luminaire a fairly large area with evenly distributed light and is relatively glare free. • Use portable light towers for temporary / short time construction activities. These light towers can be attached to a trailer with a generator and can be towed by a vehicle.				

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38	General	Hoarding/fencing and housekeeping/ waste and materials management	Visual	Improper materials storage, littering, unavailability of	Abnormal	Displeasing experience for visual receptors (tourists) who will have direct views to the project site in close proximity.	5	2	Medium	Yes	No	Provide hoardings/fences around the project construction area	3	2	Low	